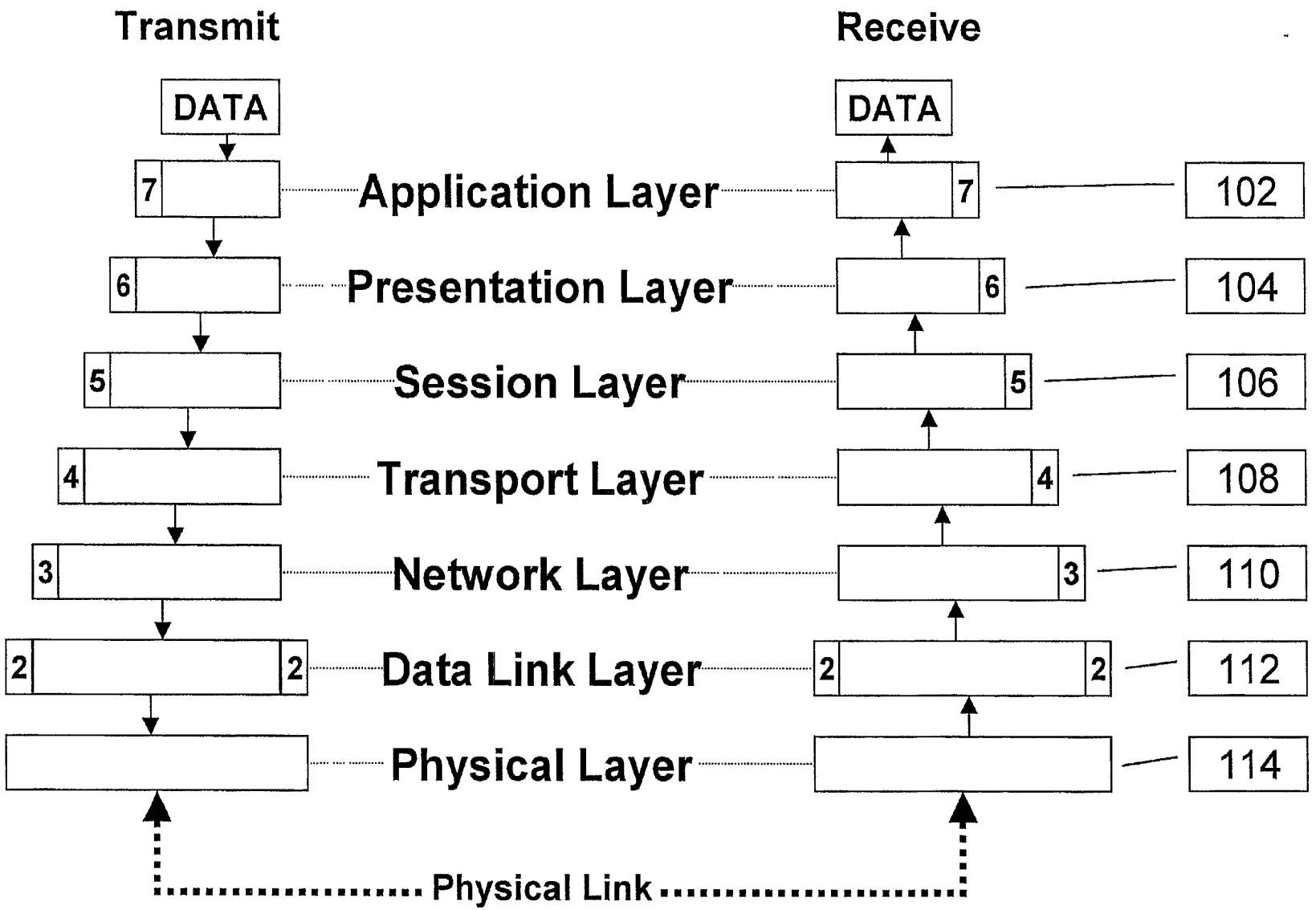


Fig. 1 (Prior Art)

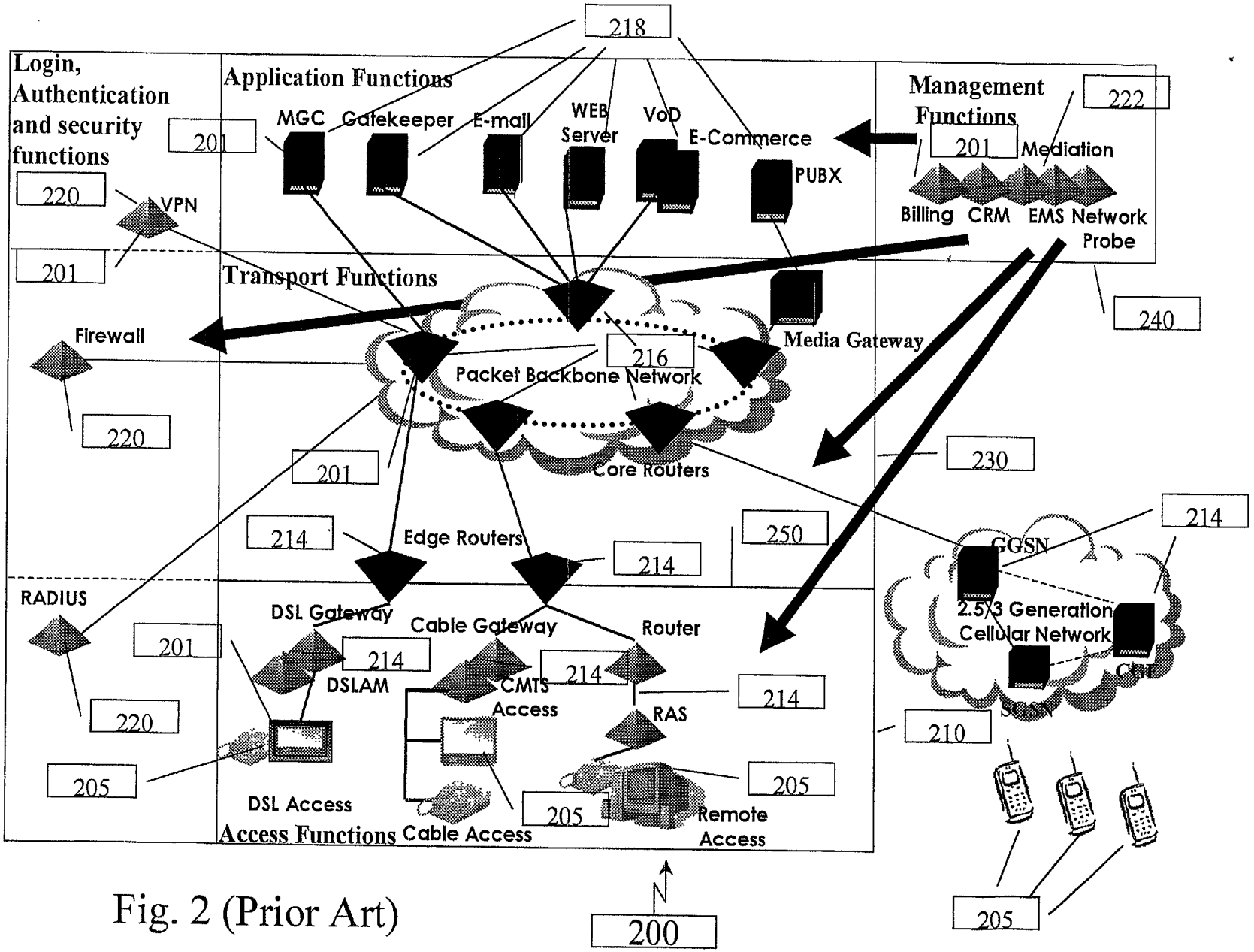


Fig. 2 (Prior Art)

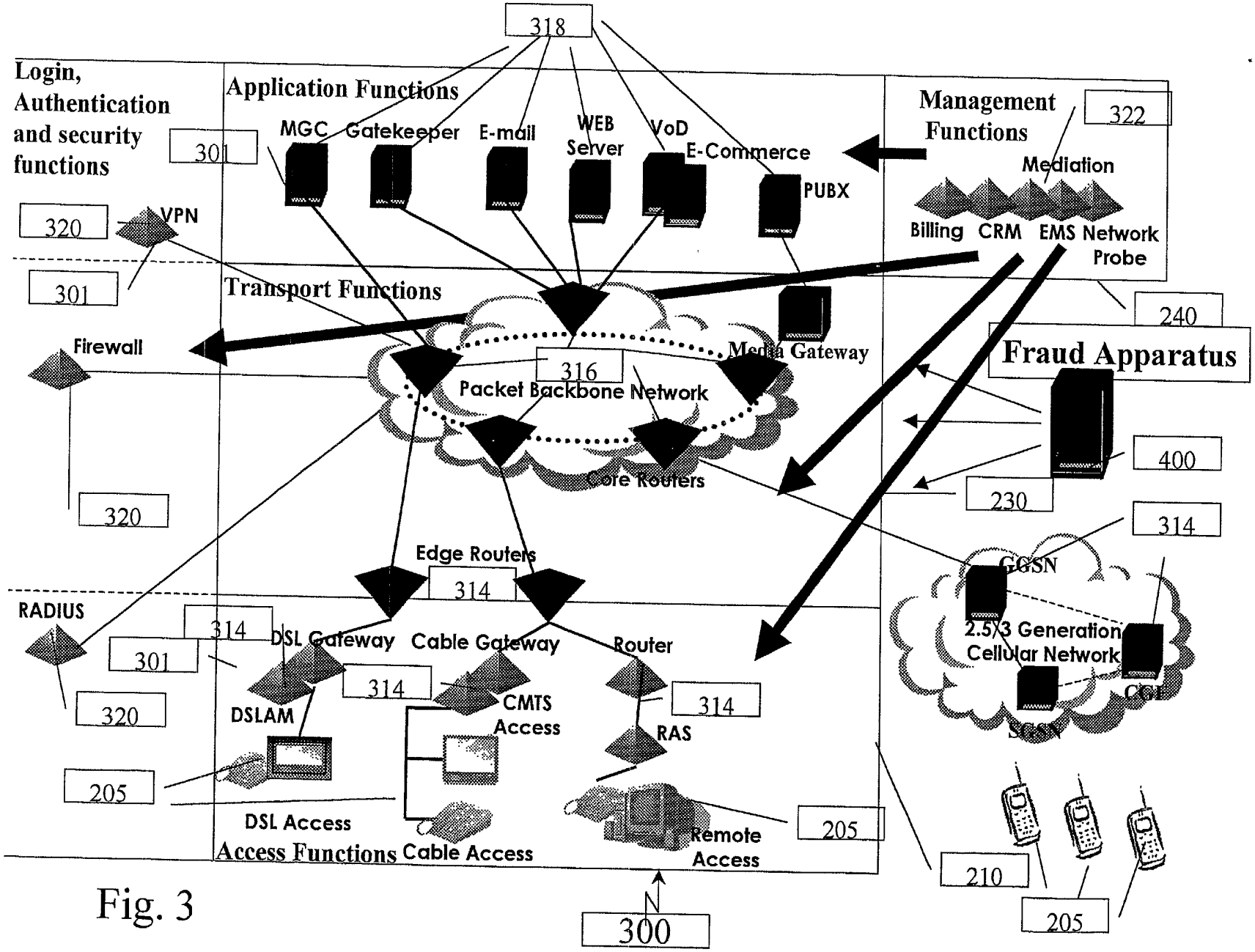

318
Login, Authentication and security functions
301
Application Functions
MGC
Gatekeeper
E-mail
WEB Server
VoD
E-Commerce
PUBX
Management Functions
322
Mediation
Billing
CRM
EMS
Network Probe
320
VPN
301
Transport Functions
240
Fraud Apparatus
Firewall
Media Gateway
316
Packet Backbone Network
Core Routers
400
230
320
314
Edge Routers
314
GGSN
RADIUS
314
DSL Gateway
Cable Gateway
Router
2.5/3 Generation Cellular Network
301
314
314
320
DSLAM
CMTS Access
RAS
SGSN
CGI
205
205
DSL Access
Remote Access
Access Functions
Cable Access
210
205
300

Fig. 3

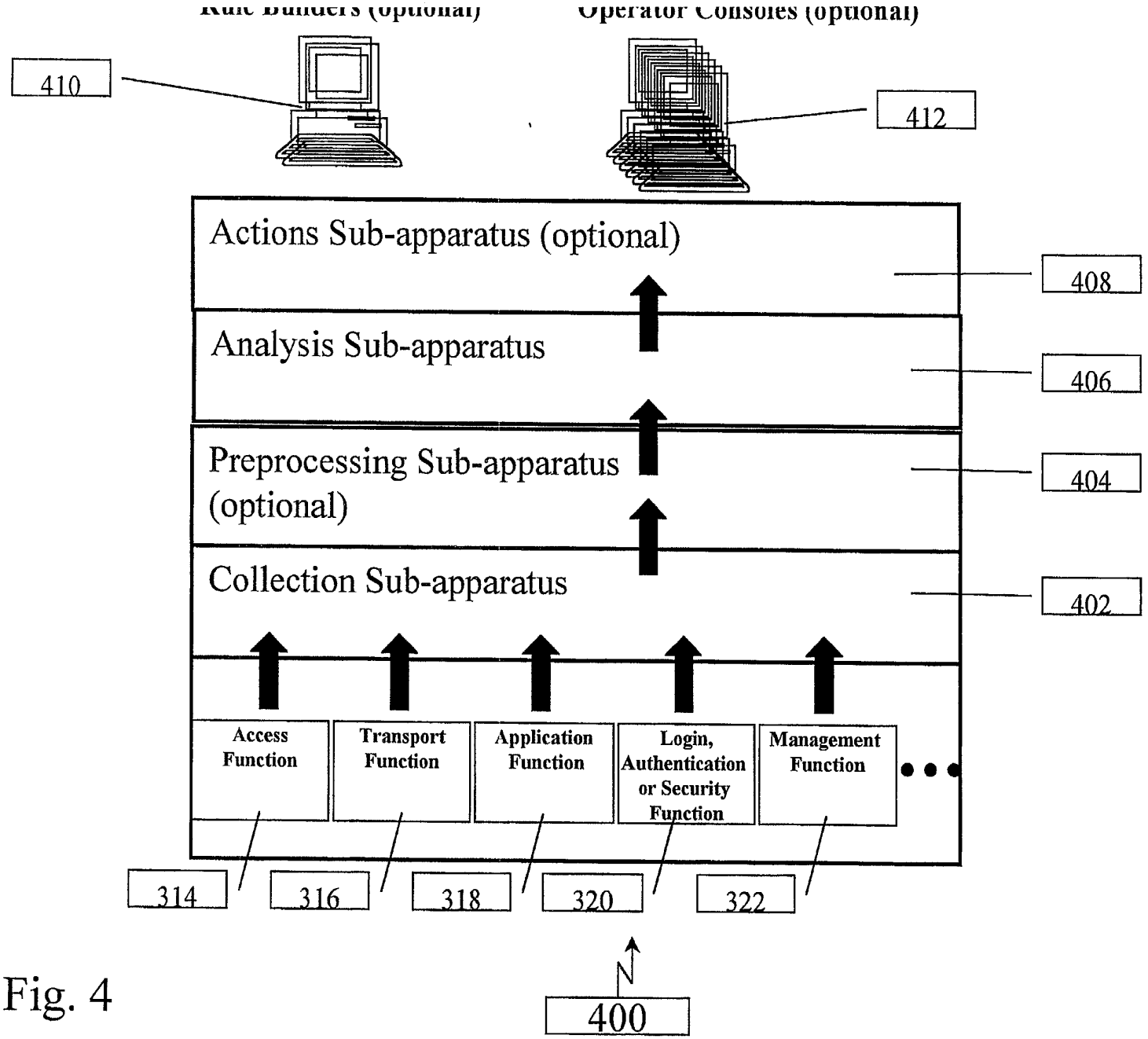

Rule Builders (optional)
Operator Consoles (optional)
410
412
Actions Sub-apparatus (optional)
408
Analysis Sub-apparatus
406
Preprocessing Sub-apparatus (optional)
404
Collection Sub-apparatus
402
Access Function
Transport Function
Application Function
Login, Authentication or Security Function
Management Function
314
316
318
320
322
N
400

Fig. 4

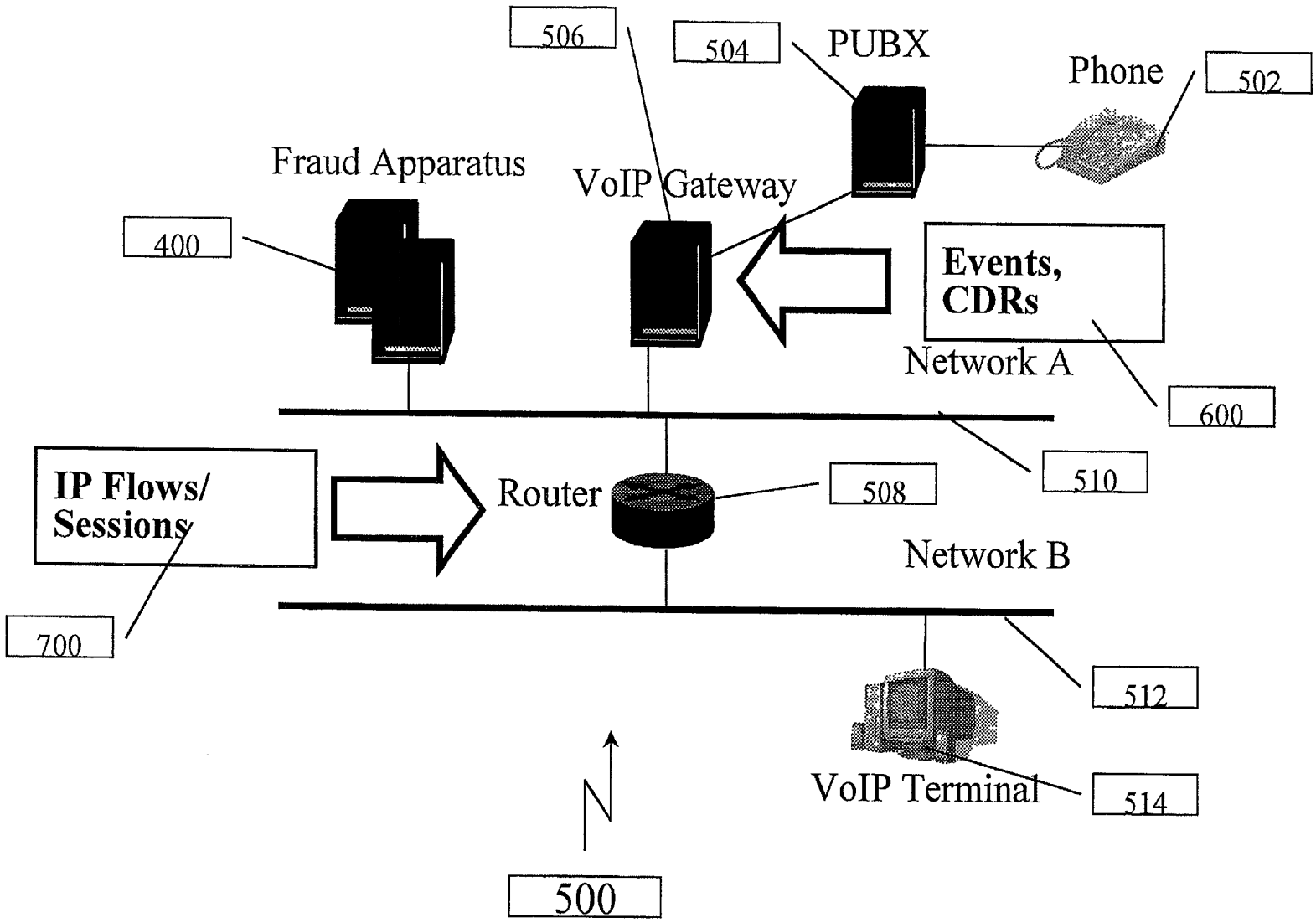
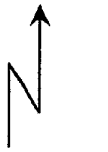

506
504
PUBX
Phone
502
Fraud Apparatus
VoIP Gateway
400
Events,
CDRs
Network A
600
510
IP Flows/
Sessions
Router
508
Network B
700
512
VoIP Terminal
514
500

Fig. 5

Field	Description	Example
Session ID	Unique number of the session	11534 — 602
Gateway ID	The name of the gateway	Gateway.neteyecorp.com — 604
Call Origin	Indicates the origin of the call	Originate — 606
Call Type	Indicate call type	VoIP — 608
Connect Time	**The connect time for this call**	**18:27:31.072 UTC Wed Dec 9 1998** — 610
Disconnect Time	**The disconnect time for this call**	**18:27:50.070 UTC Wed Dec 9 1998** — 612
Disconnect Cause	The cause for disconnect of the call	10 — 614
Remote IP Address	IP Address of the Remote gateway	10.11.253.8 — 616



600

Fig. 6

Field	Description	Example
Srcaddr	Source IP address	10.10.248.85 — 702
Dstaddr	Destination IP address	10.11.253.15 — 704
First	**The time of the first packet of the flow**	**18:15:31.072 UTC Wed Dec 9 1998** — 706
Last	**The time of the last packet of the flow**	**23:55:52.076 UTC Wed Dec 9 1998** — 708
doctats	Total number of bytes in the packets	154868 — 710

700

Fig. 7

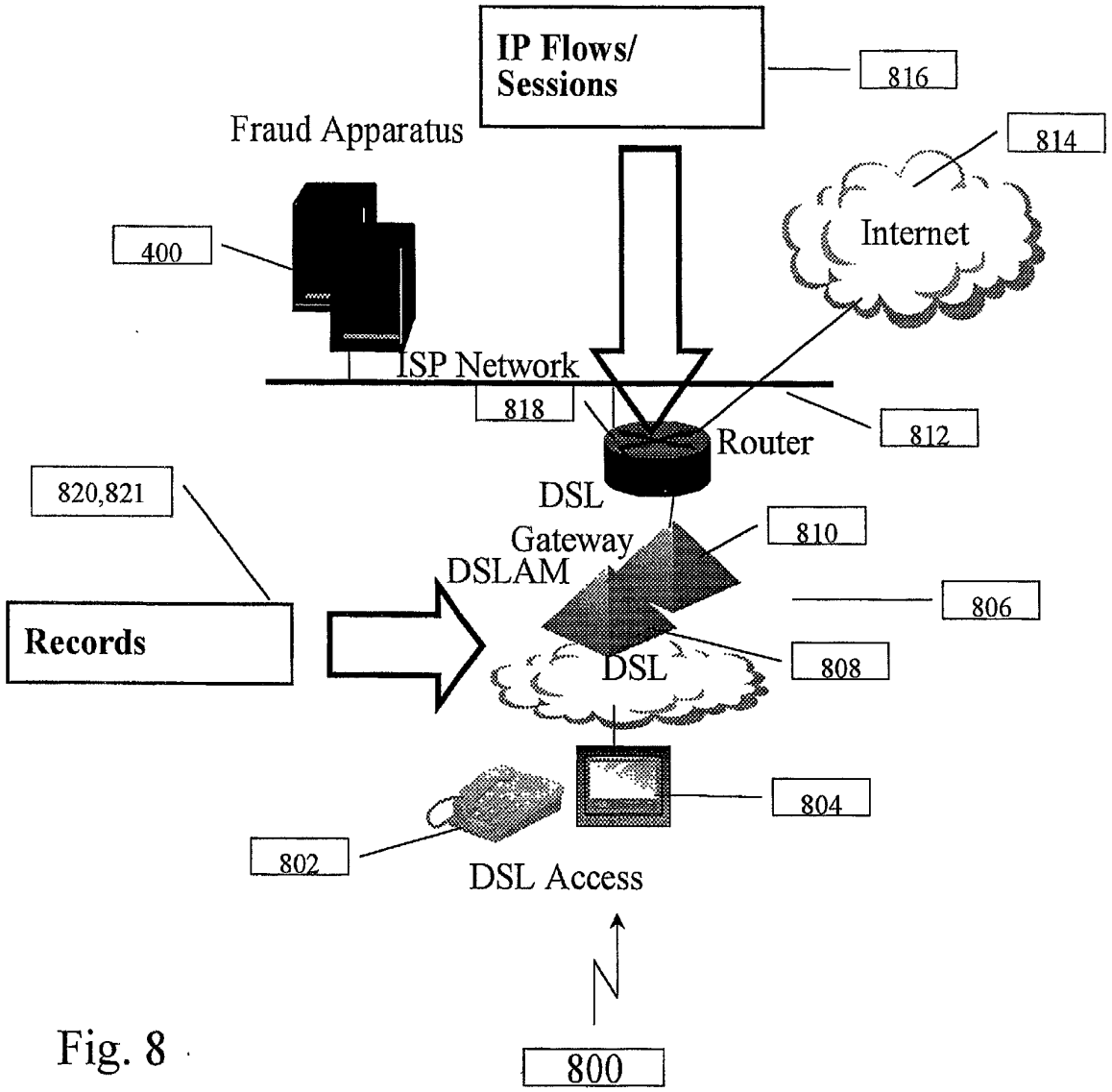

IP Flows/
Sessions
816
Fraud Apparatus
814
400
Internet
ISP Network
818
812
Router
820,821
DSL
Gateway
810
DSLAM
806
Records
DSL
808
804
802
DSL Access
800

Fig. 8

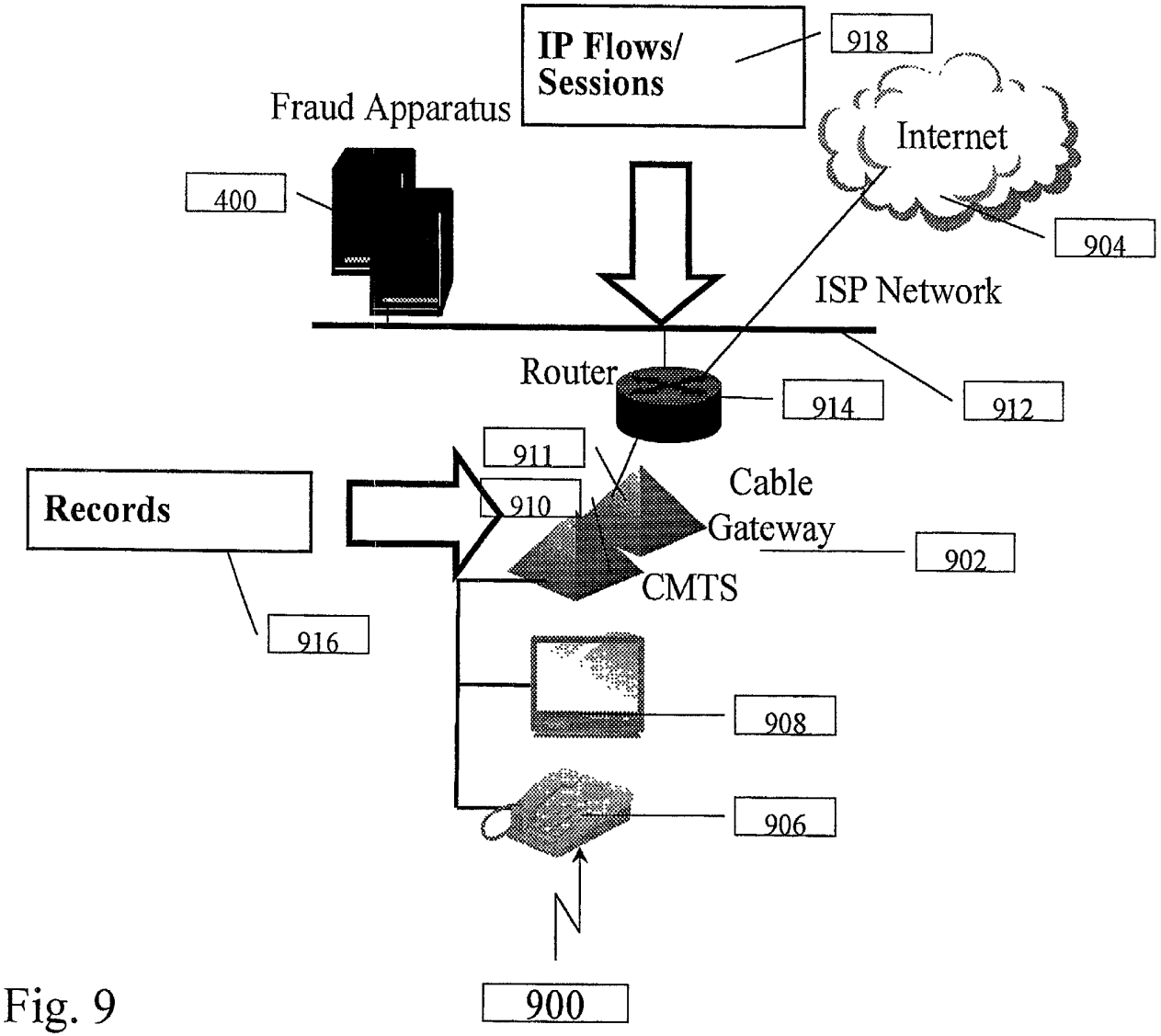

IP Flows/
Sessions
918
Fraud Apparatus
Internet
400
904
ISP Network
Router
914
912
911
910
Records
Cable
Gateway
902
CMTS
916
908
906
N
900

Fig. 9

Fraud Apparatus

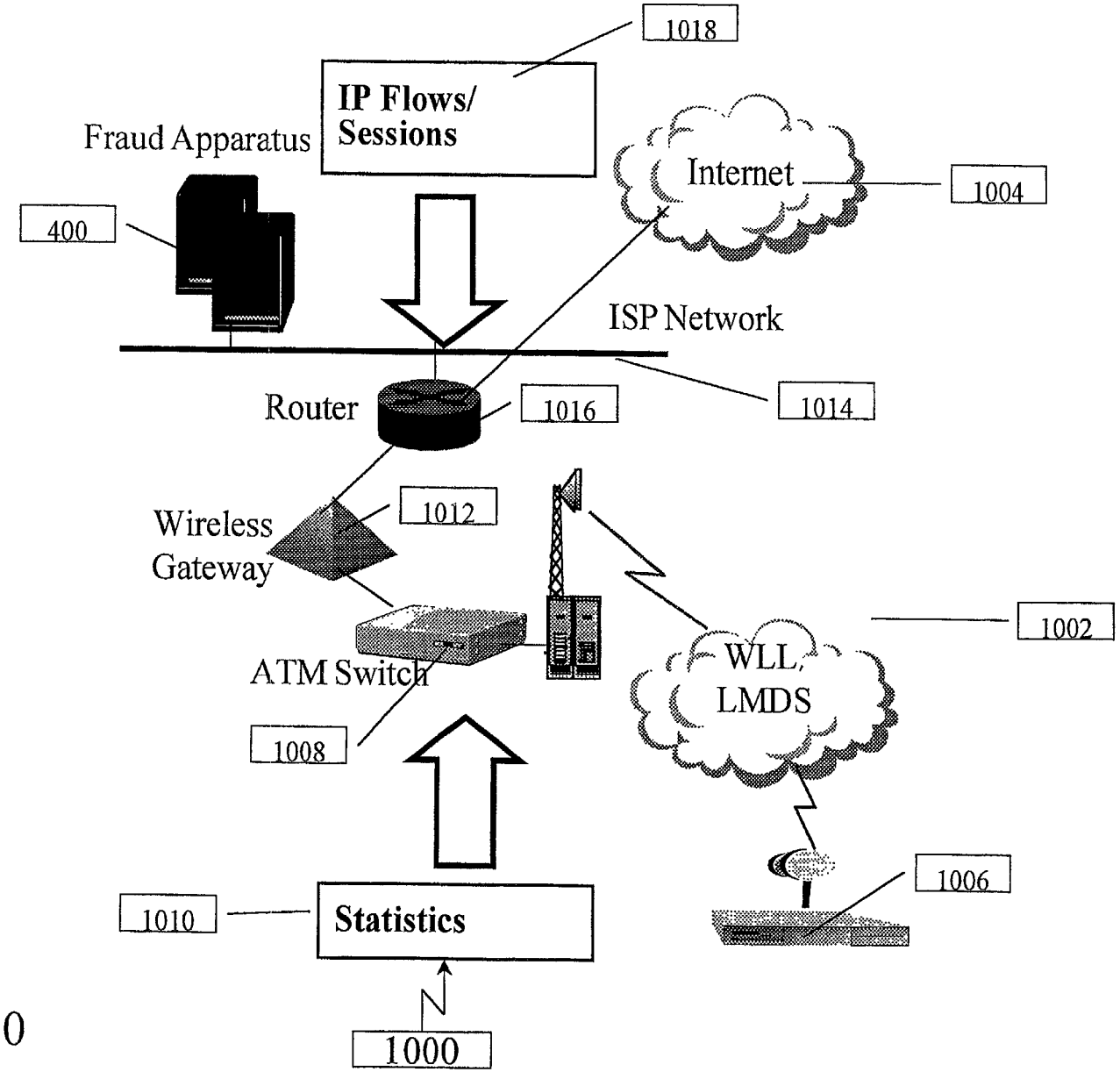


Fig. 10

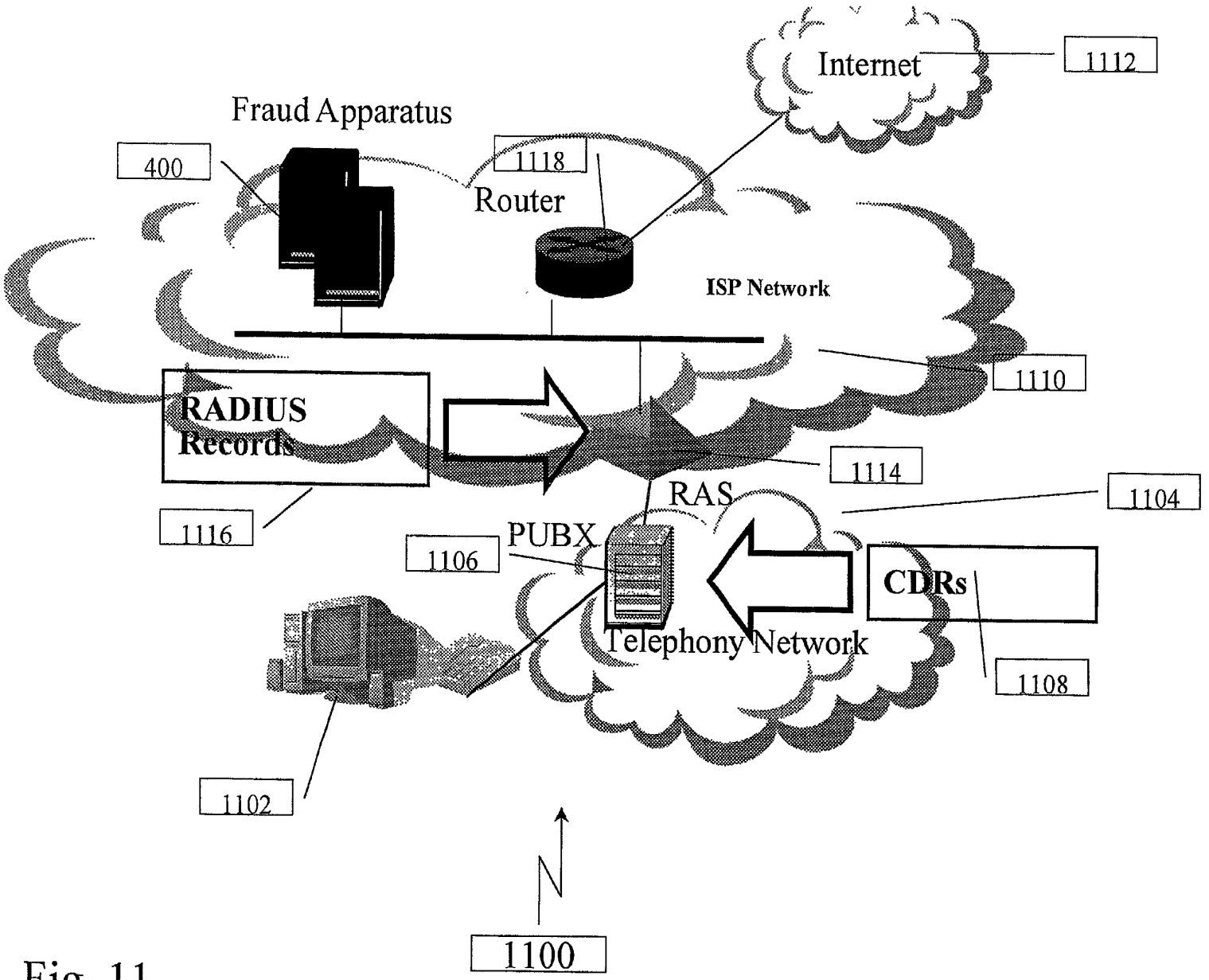

Internet
1112
Fraud Apparatus
400
1118
Router
ISP Network
1110
RADIUS
Records
1114
RAS
1104
1116
PUBX
1106
CDRs
Telephony Network
1108
1102
N
1100

Fig. 11

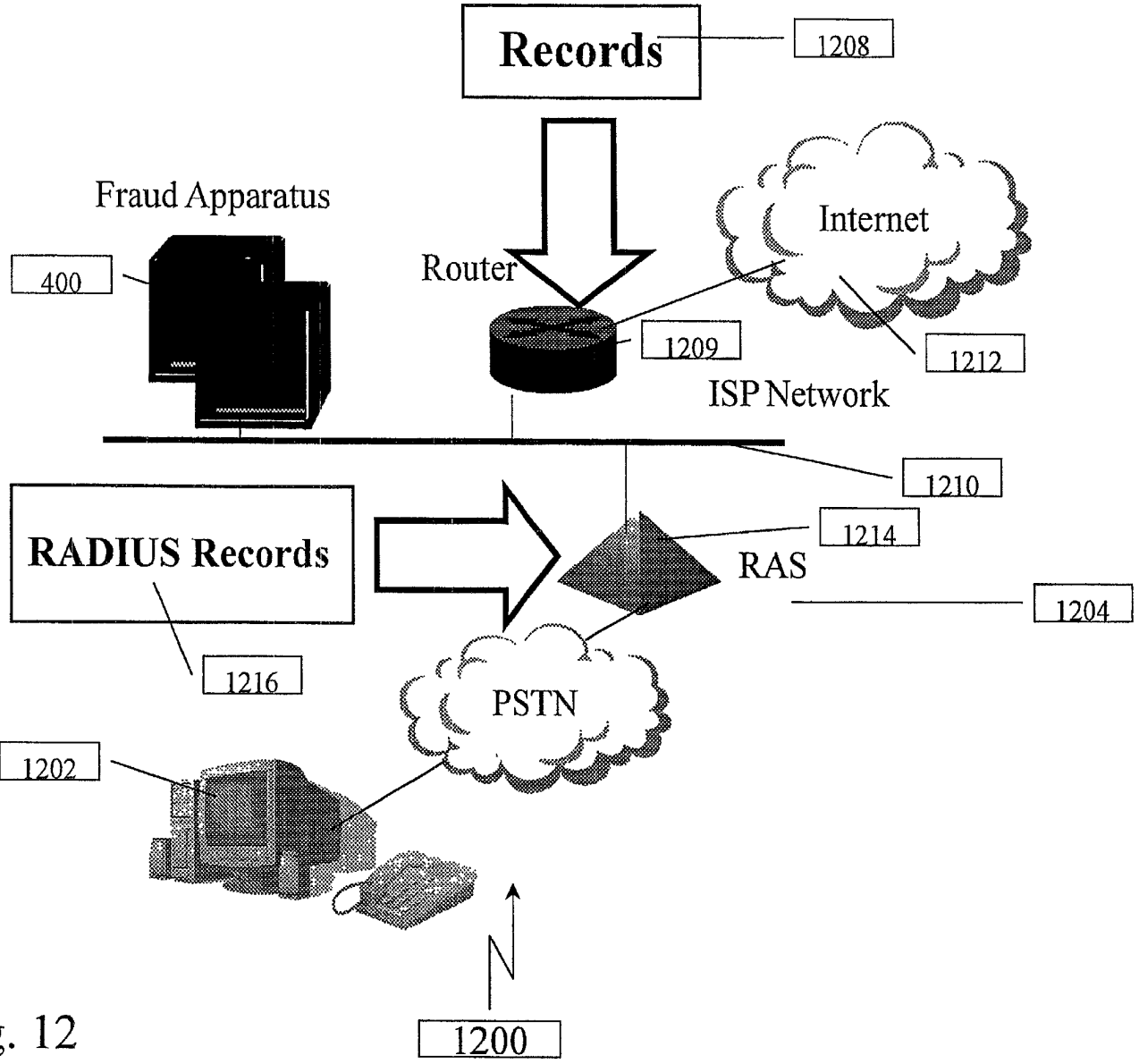

Records
1208
Fraud Apparatus
400
Router
1209
Internet
1212
ISP Network
1210
RADIUS Records
1214
RAS
1204
1216
PSTN
1202
1200

Fig. 12

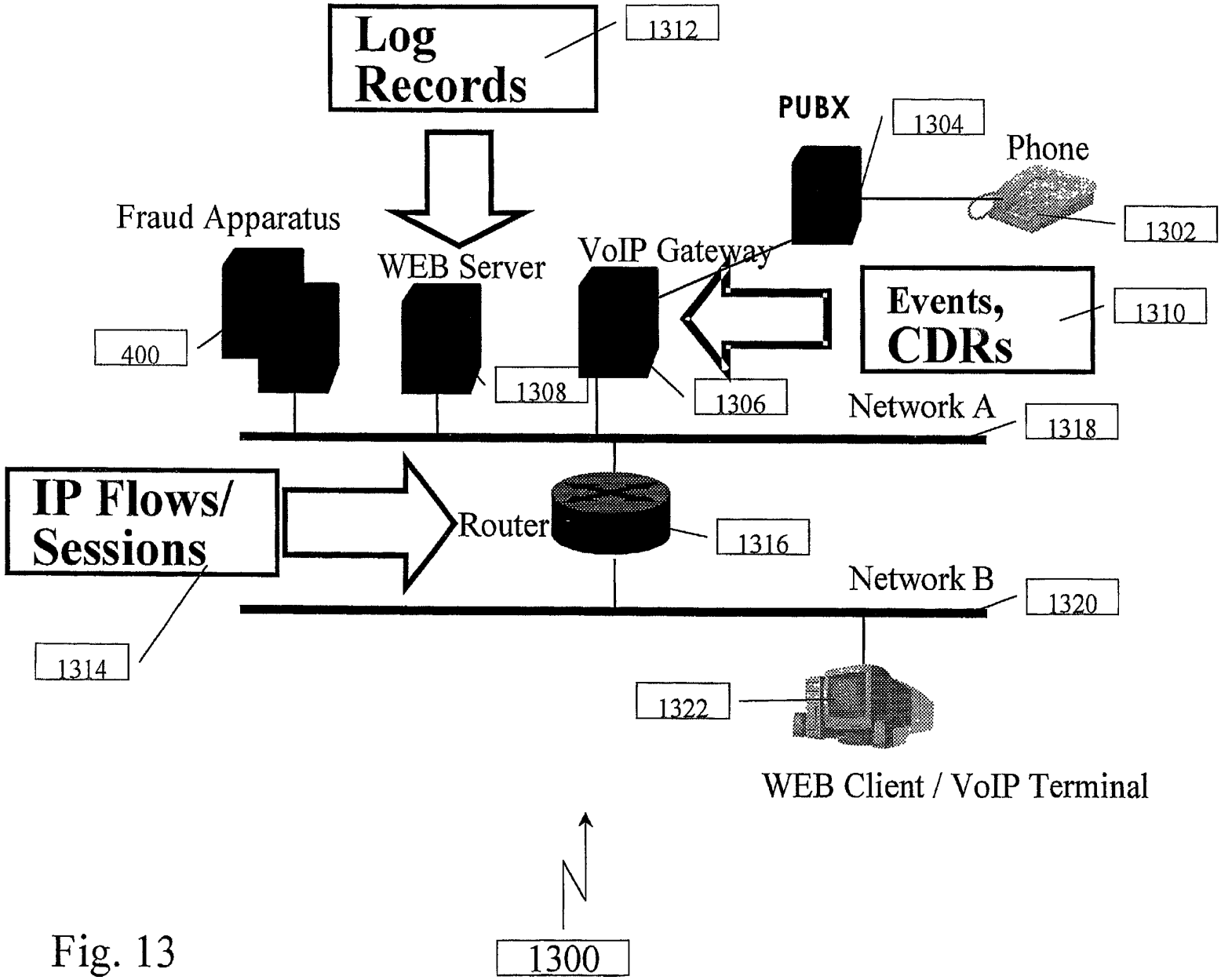

Log Records
1312
PUBX
1304
Phone
1302
Fraud Apparatus
WEB Server
VoIP Gateway
Events, CDRs
1310
400
1308
1306
Network A
1318
IP Flows/ Sessions
Router
1316
Network B
1320
1314
1322
WEB Client / VoIP Terminal
1300

Fig. 13